

--1. (Thrice Amended) A process for fabricating a semiconductor device having a buried layer comprising the steps of:

forming a buried implanted impurity ion region at a location which is spaced below a surface of a substrate where a buried layer is to be formed in the substrate;

placing the substrate inside a reactor furnace and, while maintaining the substrate in the reactor furnace;

providing a nonoxidizing atmosphere inside of the reactor furnace; annealing the substrate to activate implanted impurity-ions by increasing the internal temperature of the reactor furnace up to a first temperature wherein the first temperature does not cause oxide induced stacking fault to occur in the nonoxidizing atmosphere; and

before the buried ion implanted region beneath the surface of the substrate expands upwardly sufficiently to reach the surface of the substrate, changing the internal temperature of the reactor furnace from the first temperature to a second temperature of approximately 1,000 Centigrade, during which time the buried implanted impurity ion region diffuses both upwardly and downwardly from the location below the surface of the substrate, so as to allow an epitaxial crystal to start growing on the surface and introducing an epitaxial growth gas into the reactor furnace to cause an epitaxial layer to grow on the surface of the substrate, thereby inhibiting autodoping and formation of crystal defects in the epitaxial layer; and

then removing the substrate from the reactor furnace.